FORM PTO-1390 (Modified) (REV 11-98) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

		ATTORNEY'S DOCKET NUMBER: MAT-8151US
		U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR): To be assigned 09/868202
INTERNATIONAL APPLICATION NO.: PCT/JP99/06896	INTERNATIONAL FILING DATE: 09 December 1999 (09.12.99)	PRIORITY DATE CLAIMED: 15 December 1998 (15.12.98)

TITLE OF INVENTION

VIDEO EDITING DEVICE AND VIDEO EDITING METHOD

APPLICANT(S) FOR DO/EO/US

Koji Sawada

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
   a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ A copy of the International Search Report (PCT/ISA/210).
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
9. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). (Unexecuted)
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 13 to 20 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☒ Certificate of Mailing by Express Mail
20. ☐ Other items or information:

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.5)	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
09/[illegible]68202 (to be assigned)	PCT/JP99/06896	MAT-8151US

21. The following fees are submitted:.

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :	CALCULATIONS	PTO USE ONLY
☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO $970.00		
☒ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO $840.00		
☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO $690.00		
☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) $670.00		
☐ International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) $96.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).	$0.00	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	2 - 20 =	0	x $18.00	$0.00	
Independent claims	2 - 3 =	0	x $78.00	$0.00	
Multiple Dependent Claims **(check if applicable)**.			☐	$0.00	
TOTAL OF ABOVE CALCULATIONS			=	$860.00	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) **(check if applicable)**.			☐	$0.00	
SUBTOTAL			=	$860.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).			+	$0.00	
TOTAL NATIONAL FEE			=	$860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) **(check if applicable).**			☐	$0.00	
TOTAL FEES ENCLOSED			=	$860.00	
				Amount to be: refunded	$
				charged	$

☒ A check in the amount of **$860.00** to cover the above fees is enclosed.

☐ Please charge my Deposit Account No. in the amount of to cover the above fees.
A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **18-0350** A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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SIGNATURE

Lawrence E. Ashery
NAME

34,515
REGISTRATION NUMBER

June 14, 2001
DATE

MAT-8151US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Koji Sawada.	: Art Unit:
Serial No.:	To Be Assigned	: Examiner:
Filed:	Herewith	:
FOR:	VIDEO EDITING DEVICE AND VIDEO EDITING METHOD	:

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231
SIR:

Prior to examination, please amend the above application as follows:

IN THE SPECIFICATION:

After the title and before the first paragraph, please insert the following paragraph:

THIS APPLICATION IS A U.S. NATIONAL PHASE APPLICATION OF PCT INTERNATIONAL APPLICATION PCT/JP99/06896.

IN THE DRAWINGS:

Please delete pages "6/6" of the drawings, also labeled as "List of Reference Numerals of the Drawings" in its entirety.

Respectfully submitted,

Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicant

LEA/jam
Dated: June 14, 2001
Suite 301, One Westlakes, Berwyn
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The Assistant Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

EXPRESS MAIL Mailing Label Number: EL 741593143
Date of Deposit: June 14, 2001

I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on the date indicated above and that the deposit is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Kathleen Libby

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VIDEO EDITING DEVICE AND VIDEO EDITING METHOD

TECHNICAL FIELD

The present invention relates to a device and method for editing video information of a video information recording medium such as a magnetic tape, a magnetic disk, an optical disk or the like.

BACKGROUND ART

FIG. 6 is a system configuration of a conventional video editing device. In FIG. 6, rotary drum 600 scans magnetic tape (recording medium) 610 to read a video signal, which is already recorded on magnetic tape 610, via playback heads 601A, 601B. When a video signal to be inserted is input from an external device via input section 602 to inserting means 603, inserting means 603 detects each boundary between minimum units of the data, e.g. each boundary between frames, and outputs the video signal to be inserted to record heads 604A, 604B in the order in which the boundaries are detected.

This conventional video editing device has maintained its insertion without indicating any warning even when the data already recorded on magnetic tape 610 was invalid. In other words, this device has maintained its insertion without indicating any warning even when the underlying data was discontinuous or different in format from the data to be inserted. Such insertion does not provide results as intended at the time of editing when the magnetic tape is played back after editing, thus causing outputs of meaningless data. Presumable causes of the invalid underlying data include forced recording previously performed at some midpoint that causes a discontinuous point, the recording of data with another format at some midpoint and the others.

FIG. 3 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data is valid and undergoes insert editing. FIG. 4 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data has a discontinuous point caused by forced recording or the like and undergoes insert editing. FIG. 5 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data changes in format at some midpoint and undergoes insert editing. When the underlying data is valid, as shown in FIG. 3, underlying data 301 is in phase with video signal 302 from the external device, so that the respective boundaries of these data are in phase with to each other at all times. In this case, insert editing can normally be performed.

When the underlying data has the discontinuous point present at some midpoint, as shown in FIG. 4, underlying data 401 becomes out of phase with video signal 402 from the external device, so that insert-edited data becomes irregular. Similarly, when the data changes in format at some midpoint, as shown in FIG. 5, underlying data 501 becomes out of phase with video signal 502 from the external device. In this case, edited data visible to a user of the video editing device may look valid and has often been missed until it has developed into a major problem.

DISCLOSURE OF THE INVENTION

The present invention addresses such conventional problems and aims to implement a video editing device and a video editing method capable of reducing trouble caused by an editing work by issuing a warning about meaningless editing of data in insert editing when invalid underlying data caused by user's unwitting operation or the like is present.

To resolve the above-mentioned problems, the video editing device of the

present invention comprises: insert data reading means for externally reading data to be inserted; underlying data reading means for reading underlying data recorded on a recording medium; data checking means for checking whether given boundaries of the underlying data read by the underlying data reading means are continuously recorded at even intervals, every each boundary of the underlying data, and whether the underlying data has a signal format identical with that of the insert data read by the insert data reading means, every each minimum unit of the underlying data, by comparing the signal formats including data transfer rates between the insert data and the underlying data; warning indicating means for issuing a warning either when the given boundaries of the underlying data are not continuously recorded at even intervals or when the underlying data does not have the signal format identical with that of the insert data as a result of the check made by the data checking means; inserting means for inserting the data to be inserted into the underlying data; and edited data recording means for insert recording edited data output from the inserting means on the recording medium.

The video editing method of the present invention comprises the steps of: externally reading data to be inserted; reading underlying data recorded on a recording medium; checking whether given boundaries of the underlying data read by the underlying data reading step are continuously recorded at even intervals, every each boundary of the underlying data, and whether the underlying data has a signal format identical with that of the insert data read by the insert data reading step, every each minimum unit of the underlying data, by comparing the signal formats including data transfer rates between the insert data and the underlying data; issuing a warning either when the given boundaries of the underlying data are not continuously recorded at even intervals or when the underlying data does not have the signal format identical

with that of the insert data as a result of the check made in the data checking step; inserting the data to be inserted into the underlying data; and insert recording edited data obtained in the inserting step on the recording medium.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating a basic configuration of a video editing device in accordance with one exemplary embodiment of the present invention.

FIG. 2 is a block diagram illustrating a system configuration of the video editing device, showing a case where a magnetic tape recorder/playback device is used as a recorder/playback system.

FIG. 3 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data is valid and undergoes insert editing.

FIG. 4 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data is discontinuous and undergoes insert editing.

FIG. 5 illustrates a phase relationship between underlying data and insert data, showing a case where the underlying data changes in format at some midpoint and undergoes insert editing.

FIG. 6 is a block diagram illustrating a system configuration of a conventional video editing device.

BEST MODE FOR CARRYING OUT THE INVENTION

(Exemplary Embodiment 1)

A video editing device in accordance with the first exemplary embodiment of the present invention is demonstrated with reference to FIGS. 1 and 2. FIG. 1 is a block diagram of the video editing device in accordance with the present embodiment, laying particular emphasis on a signal processing system thereof.

In FIG. 1, underlying data reading means 101 reads underlying data, on which insertion is performed, from a recording medium every each minimum unit of the data. Insert data reading means 102 reads data to be inserted from an external device every each minimum unit of the data. Inserting means 103 inserts the data read from insert data reading means 102 into the underlying

data read from the underlying data reading means 101 every each minimum unit of the underlying data, thus making edited data. Before

inserting means 103 performs insertion to make the edited data every each minimum unit of the underlying data, data checking means 105 checks, every each minimum unit, validities of the underlying data read from underlying data reading means 101, i.e., continuity of the underlying data, compatibility of the underlying data with the data read from insert data reading means 102 and the others. Warning indicating means 106 gives a warning to a user when the underlying data is judged as being invalid (incompatible) by data checking means 105, i.e., either when the boundaries between minimum units of the underlying data are discontinuous or when the underlying data does not have a signal format identical with that of the insert data. Edited data recording means 104 records the edited data which has undergone inserting means 103 on the recording medium.

FIG. 2 is a system block diagram of the video editing device in accordance with the present embodiment in which a magnetic tape recorder/playback device is used as an example of a recorder/playback system. In FIG. 2, the video editing device in accordance with the present embodiment includes, similarly to the conventional device shown in FIG. 6, rotary drum 200, input section 202 and inserting means 103. In the present embodiment, data checking means 105 is provided between input section 202 and inserting means 103. When a result of a comparison made by data checking means 105 indicates incompatibility, warning indicating means 106 provided indicates the incompatibility.

Playback heads 201A, 201B correspond to underlying data reading means 101 of FIG. 1, and input section 202 corresponds to insert data reading means 102 of FIG. 1.

With reference to FIG. 2, an explanation of operation performed by inserting a video signal input from input section 202 into a video signal already

recorded on magnetic tape 210 in given format is given next. Rotary drum 200 scans magnetic tape 210 to read the video signal via playback heads 201A, 201B and supplies inserting means 103 and data checking means 105 with the video signal. When the video signal to be inserted is input from an external device

via input section 202 to inserting means 103, inserting means 103 detects each boundary between minimum units of the data and outputs the video signal to be inserted to record heads 204A, 204B in the order in which the boundaries are detected. Record heads 204A, 204B record the video signal input on magnetic tape 210.

Here, data checking means 105 checks, every each boundary between minimum units of the underlying data, whether the boundaries of the underlying data are continuously recorded at even intervals, and whether respective signal formats, which include data transfer rates, of the insert data and the underlying data conform to each other before insertion is actually carried out. Either when the boundaries of the underlying data are not continuously recorded at even intervals or when the underlying data does not have the signal format identical with that of the insert data, warning indicating means 106 notifies the user of the incompatibility of the underlying data through display or the use of an audible warning.

As described above, when insert editing is performed on the underlying data, the boundaries of which are not continuously recorded at even intervals or the signal format of which is not identical with that of the insert data, the user is warned, every each minimum unit of the underlying data, that the meaningless edited data is made, so that the reduction of confusion caused by an editing work can be improved.

The video editing device in accordance with the present embodiment has utilized the magnetic tape recorder/playback device. However, an optical disk recorder/playback device, a magneto-optical disk recorder/playback device, a magnetic disk recorder/playback device, a semiconductor recorder/playback device or the like can be used instead.

INDUSTRIAL APPLICABILITY

According to the video editing device and the video editing method of the present invention, compatibilities of underlying data, i.e., whether boundaries of the underlying data are continuously recorded at even intervals and whether respective signal formats, which include data transfer rates, of insert data and the underlying data conform to each other are checked before insertion is carried out every each minimum unit of the underlying data, so that a warning can be given to a user every each minimum unit of the underlying data when the underlying data is incompatible, i.e., either when the boundaries are not continuously recorded at even intervals or when the underlying data does not have the signal format identical with that of the insert data. Consequently, meaningless insert editing of video data can be prevented from being carried out.

What is claimed is:

1.(amended) A video editing device comprising:

insert data reading means for externally reading data to be inserted;

underlying data reading means for reading underlying data recorded on a recording medium;

data checking means for checking whether given boundaries of the underlying data read by the underlying data reading means are continuously recorded at even intervals, every each boundary of the underlying data, and whether the underlying data has a signal format identical with that of the insert data read by the insert data reading means every each minimum unit of the underlying data, by comparing the signal formats including data transfer rates between the insert data and the underlying data;

warning indicating means for issuing a warning either when the given boundaries of the underlying data are not continuously recorded at even intervals or when the underlying data does not have the signal format identical with that of the insert data as a result of the check made by the data checking means;

inserting means for inserting the data to be inserted into the underlying data; and

edited data recording means for insert recording edited data output from the inserting means on the recording medium.

2.(amended) A video editing method comprising the steps of:

externally reading data to be inserted;

reading underlying data recorded on a recording medium;

checking whether given boundaries of the underlying data read by the underlying data reading step are continuously recorded at even intervals, every each boundary of the underlying data, and whether the underlying data has a

signal format identical with that of the insert data read by the insert data reading step every each minimum unit of the underlying data, by comparing the signal formats including data transfer rates between the insert data and the underlying data;

issuing a warning either when the given boundaries of the underlying data are not continuously recorded at even intervals or when the underlying data does not have the signal format identical with that of the insert data as a result of the check made in the data checking step;

inserting the data to be inserted into the underlying data; and

insert recording edited data obtained in the inserting step on the recording medium.

ABSTRACT

A video editing device adapted to issue a warning to a user when invalid underlying data undergoes insert editing. Underlying data reading means (101) reads underlying data from a recording medium and outputs it to inserting means (103) and data checking means (105). Insert data reading means (102) reads insert data from an external device and outputs it to inserting means (103) and data checking means (105). Before insertion is carried out, data checking means (105) checks the underlying data to determine whether the continuity of the data and a transfer rate of the signal or a format thereof are compatible. Warning indicating means (106) provides the user with a warning when the underlying data is incompatible.

Fig. 1

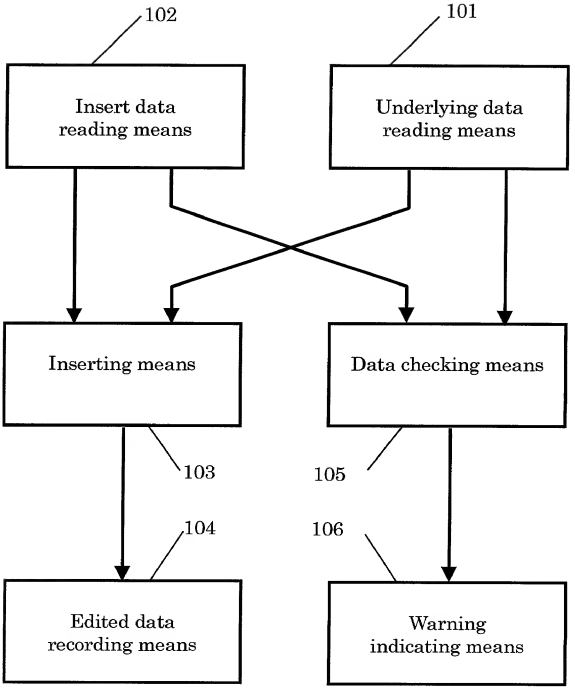


Fig. 2

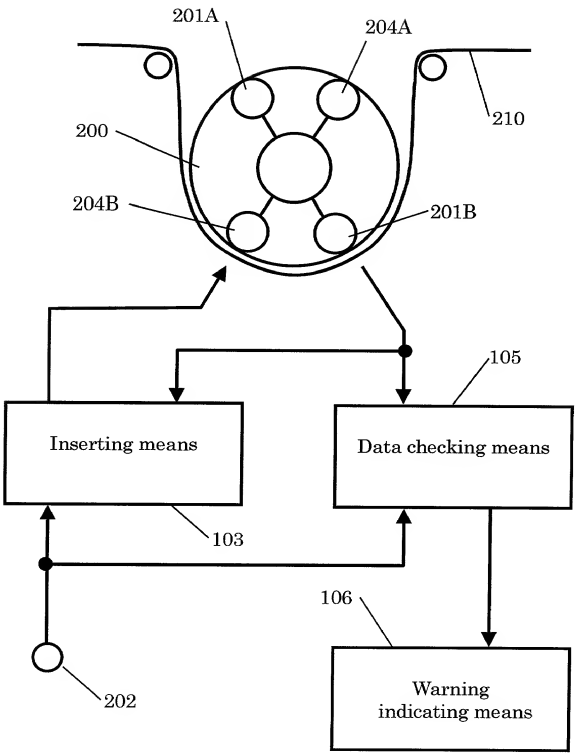


Fig. 3

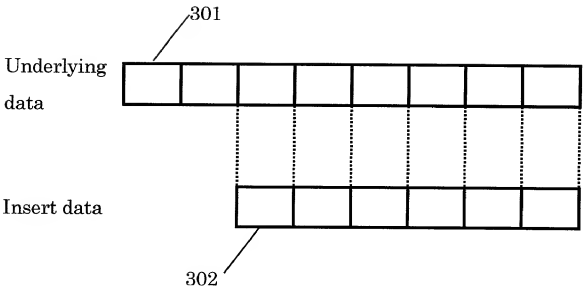


Fig. 4

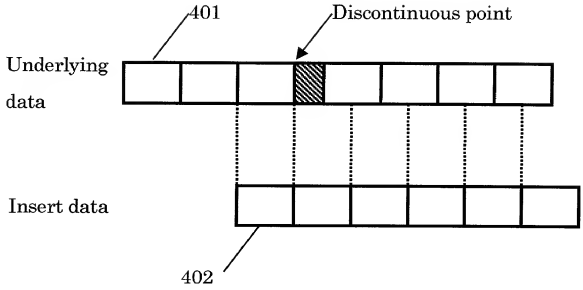


Fig. 5

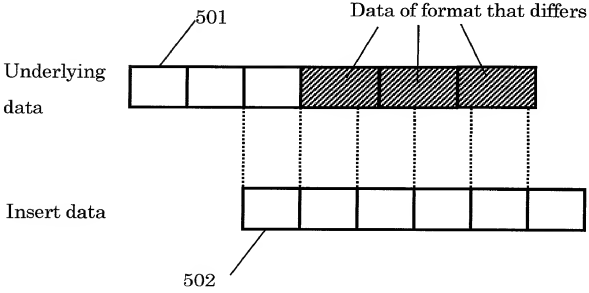
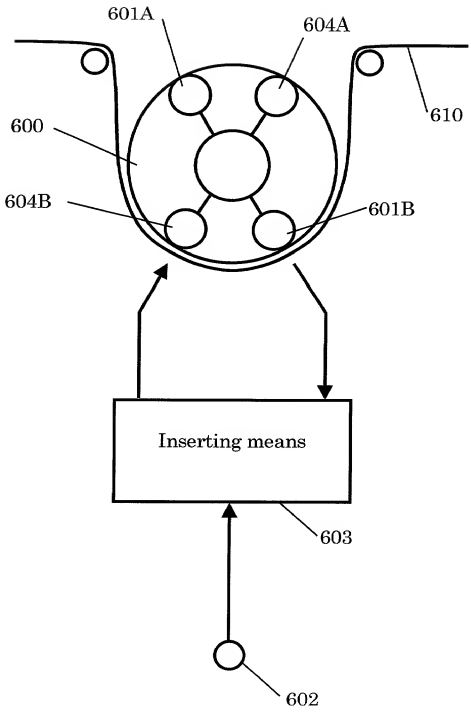


Fig. 6



List of Reference Numerals of the Drawings

101 Underlying data reading means

102 Insert data reading means

103 Inserting means

104 Edited data recording means

105 Data checking means

106 Warning indicating means

200 Rotary drum

201A, 201B Playback head

202 Input section

204A, 204B Record head

210 Magnetic tape

 P21869

#3

Declaration and Power of Attorney For Patent Application
English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention VIDEO EDITING DEVICE AND VIDEO EDITING METHOD, the specification of which is attached hereto unless the following box is checked:

☒ was filed on December 9, 1999 as
United States Application Number or PCT International Application Number PCT/JP99/06896
and was amended on November 10, 2000 under Article 34. (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Not Claimed
10-355570	Japan	15 Dec 1998	☐
(Number)	(Country)	(Day/Month/Year Filed)	
(Number)	(Country)	(Day/Month/Year Filed)	☐

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

—	—
(Application Number)	(Filing Date)
—	—
(Application Number)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)
(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Paul F. Prestia	Reg. No. 23,031	Lawrence E. Ashery	Reg. No. 34,515	Mark J. Marcelli	Reg. No. 36,593
Allan Ratner	Reg. No. 19,717	Christopher R. Lewis	Reg. No. 36,201	Jack J. Jankovitz	Reg. No. 42,690
Andrew L. Ney	Reg. No. 20,300	Robert L. Andersen	Reg. No. 25,771	Jonathan H. Spadt	Reg. No. 45,122
Kenneth N. Nigon	Reg. No. 31,549	Joshua L. Cohen	Reg. No. 38,040	Christopher I. Halliday	Reg. No. 42,621
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Benjamin E. Leace	Reg. No. 33,412	Louis W. Beardell, Jr.	Reg. No. 40,506		
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) Koji Sawada

Inventor's signature Koji Sawada Date August 7, 2001

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Citizenship Japanese

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☐ Additional inventors are being named on separately numbered sheets attached hereto.